The Costs of Cycling Infrastructure

European Cyclists' Federation
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The costs of constructing cycling infrastructure vary from under €50,000 to over €10,000,000 per kilometre. While cycle tracks per se are very cheap, most costs are determined by the range of additional works included in the project. This factsheet presents the "typical" unit costs for a few different scenarios, key factors influencing the costs of cycling projects and concrete examples of cycling infrastructure projects in various European countries, either implemented in the past few years or planned for the near future.

Contents

1. Typical costs per category

euro/km	
50,000	Simple cycle track in easy terrain outside built-up area, no significant challenges
200,000	Mixed localisations and solutions, some challenges to overcome
500,000	Urban area, or difficult terrain, or cycle highway standard[1] in easy terrain
1,500,000	Cycle highway standard in urban area
10,000,000	Cycle bridge over a major river or other obstacles, elevated track

Figure 1. In greenfield conditions, a high-quality cycle track can be built for €50,000 per km. Photo credit: VeloMałopolska.

[1] The quality requirements for cycle highways differ across regions, but generally cycle highways are wider and more often use bridges or tunnels to cross major roads. See: https://cyclehighways.eu/design-and-build/design-principles.html

Figure 2. RAVeL 38, part of EuroVelo 3 in Wallonia on a disused railway, cost around €200,000 per km, including a separate "soft" lane for horse riders and repairs to engineering structures.

Figure 3. Cycle highways in the Dutch province of Gelderland are usually 4 m wide, cross major roads by tunnels and bridges, and cost between €300,000 and €1,800,000 per km.

Figure 4. Warsaw, Poland, has recently implemented 71.5 km of cycle paths with an average cost of €600,000 per km, including three bridges, renovation of 43 km of sidewalks and 70 traffic lights.

2. Key factors influencing cost of delivery

Localisation	Impact
Built-up area	High chance of necessary additional works, e.g. reconstructing drainage, electricity, gas pipes, traffic lights. Necessitates using kerbs, sometimes moving the edge of the carriageway or rearranging public transport stops. Most of these works are more expensive than the track itself. In densely built urban centres, introducing high-quality cycling infrastructure might require a complete road reconstruction. Land acquisition is also more expensive in built-up areas.
Protected heritage or environmentally sensitive area	Might require special, more expensive materials, solutions, limit the construction period and/or the selection of contractors.

Organisational factors	Impact
Co-operation of key infrastructure owners and administrators	Construction of a cycle track might require resolving conflicts with other road administrations, railways, owners of underground infrastructure (electrical grid, water, sewage). The administrator of the conflicting infrastructure might require the investor of the cycle track to include and pay for additional works as a condition of agreement (e.g. renovating the underground infrastructures before putting a new surface).
Legal tools for land acquisition	Being unable to acquire land for the optimal itinerary might lead to not only lower quality, but also increase of costs. For example, placing cycle track in narrow strip available along a road, instead of across the fields 50 m further away, might necessitate construction of drainage, adding barriers, expensive reconstructions.
Scale of works & standardisation	Short sections or diversification of technical solutions do not allow "economy of scale". Especially important in beginning countries and regions where, for example, the contractors may need to acquire new (narrower) machines to lay out cycle tracks.

Technical elements	Impact
Bridges & tunnels	Cycle track on a bridge can be 100 times more expensive per running metre than on the ground. Costs can be significantly reduced with advance planning and integrating cycle bridges and tunnels in other engineering solutions, without the need to add them separately as stand-alone projects. However, a strategically located cycle bridge can reduce the need for dedicated infrastructure on much longer section (for example by connecting existing local roads with low traffic).
Drainage	(Re)construction of drainage can be five times more expensive than construction of the cycle track itself. It can also be a factor in rural areas (especially if no tools for land acquisition exist and the cycle track is placed just next to the carriageway) and on disused railways (section in trenches).
Traffic lights	Installing or modernising traffic lights on a junction can costs as much as 5-10 km of greenfield cycle track. Several cycling projects significantly reduced the costs by removing the need for traffic lights (for example by reducing the number of car lanes and introducing traffic-calming elements).
Barriers	Different types of barriers protect cyclists from falling from a slope or bridge, but also from getting hit by a car running off the road, if the cycle track is not distanced from the carriageway. If you need to put barriers along the cycle track, it will probably cost more that the track itself (how much, it depends on the required level of protection from impact).

Technical elements	Impact
Non-standard surfaces	Non-standard surfaces might require expensive manual labour (for example paving blocks), limit the selection of contractors or incur additional costs (for example by necessitating the addition of kerbs).
Kerbs	Kerbs increase the costs of surface construction by ~30%.

The above lists present selected elements that are specific for or make a big difference for cycling projects, but it is by no means exhaustive. Other more general factors, such as a supply/demand balance on the construction market, distance from the source of construction materials or soil type, can also affect the costs of specific projects.

The following publications provide further overviews of costs on the national level:

- Typical Costs of Cycling Interventions Interim analysis of Cycle City Ambition schemes (UK, 2017): https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/742451/typical-costings-for-ambitious-cycling-schemes.pdf
- Kosten von Radschnellwegen (Germany, cycle highways only, 2019): https://www.forschungsinformationssystem.de/servlet/is/499514/?clsId0=276639&clsId1=276644&clsId2=276862&clsId3=0

3. Case studies

	Cost/km	Country	Description	Year	Length [km]	Total cost [euro]	Factors affecting cost
1	45,000	Poland	1st stage of VeloMałopolska regional network	2015-2016	190	8.6 M	Asphalt surface, 2.5 m wide, mostly on levees, includes a 160 m long cycle bridge. Implemented by the regional road administration.
2	54,500	France	Voie Bleue, section Tournus – Ouroux-sur-Saône	2020	22	1.2 M	Towpath along Saône: stabilised gravel, 3-3.5 m wide.
3	108,000	Italy	Ciclovia del Sole (EuroVelo 7), section Mirandola – Osteria Nuova	2019-2021	46	5 M	On disused railway Bologna – Verona, some barriers and bridges
4	130,000	Poland	Varied sections in Pomerania region	2019	114	14.9 M	Varying standard and localities, ~60% asphalted, implemented by different municipalities.
5	141,000	Belgium	RAVeL 156 Aublain – Mariembourg	2020	8.5	1.2 M	2.7 m asphalt, on disused railway.
6	150,000	Poland	Green Velo	2015	450	69 M	Includes 300 km dedicated cycle tracks, 150 km modernised gravel roads, 30 bridges and 2000 km of signage.
7	197,000	Belgium	RAVeL 138 Melen – Plombieres	2017-2020	23	4.5 M	2.5 m asphalt + 2 m stabilised shoulder for horse riders and joggers, on disused railway.
8	280,000	Nether-lands / Germany	Europa-Radbahn cross-border cycle highway	2019	23	6.5 M	Traffic lights with sensors prioritising cyclists, e-bike charging stations.
9	400,000	Denmark	Greater Copenhagen supercyclehighway network	n/a	746	295 M	Estimated costs of the whole system.
10	480,000	Spain	EuroVelo 8 San Fernando - Chiclana	2022	5.4	2.6 M	Protected area in the Bay of Cádiz, includes 4 bridges (longest: 200 m).
11	600,000	Poland	20 sections of cycle tracks in Warsaw	2016-2019	71.5	43 M	3 new bridges (longest: 600 m), retrofitting 1 interchange (tunnel + bridge), 43 km of sidewalks, new or modernised traffic lights on 70 intersections, 100 renovated public transport stops, 650 lanterns, 870 trees, 84500 bushes.

	Cost/km	Country	Description	Year	Length [km]	Total cost [euro]	Factors affecting cost
12	780,000	Nether-lands	9 cycle highways in the province of Gelderland	2016-2022	108	84 M	Usually 3.5-4 m wide, coloured asphalt. Includes bridges & tunnels, but also some pre-existing sections.
13	1,500,000	Germany	Cross-comparison of cycle highway studies for Hamburg, Ruhr area, Berlin, Saxony and Baden-Württemberg	n/a			Estimates from studies vary from 220,000 to 2,000,000 euro/km, including reconstruction of junctions and engineering structures; one of the studies points out that the actual road construction constitutes only 20% of the total costs.
14	12,000,000	Belgium	F3 cycle highway, section Zaventem – Diegem	2020-2021	2	24 M	Elevated cycle track, with 4 bridges, 1 tunnel and multiple connecting ramps.

Sources:

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